

FINDING OF NO SIGNIFICANT IMPACT (FONSI)
for the
Short Lake Juniper Treatment and Prescribed Burn
Klamath Falls Resource Area - Lakeview District
Environmental Assessment #OR-014-01-10

The Bureau of Land Management, Lakeview District, Klamath Falls Resource Area, has analyzed the Short Lake Juniper Treatment and Prescribed Burn Environmental Assessment containing the following proposal and their alternatives related to:

- Juniper Removal and Wildlife Habitat Restoration
- Use of Prescribed Fire

Based on the information within the Environmental Assessment, it is my determination that none of the alternatives analyzed constitutes a significant impact affecting the quality of the human environment greater than those addressed in the:

- Final-Klamath Falls Resource Area Management Plan and EIS (FEIS)(Sept. 1994), and its Record of Decision and Resource Management Plan and Rangeland Program Summary (June 2, 1995)(KFRA ROD/RMP/RPS).
- Klamath Falls Resource Area Fire Management EA#OR-014-94-09 (June 10,1994).
- Klamath Falls Integrated Weed Control Plan EA (July 21, 1993).
- Standards for Rangeland Health and Guidelines For Livestock Management For Public Lands Administered By The Bureau of Land Management In the State of Oregon and Washington (August 12,1997).
- Final Environmental Impact Statement, Vegetation Treatment On BLM Lands in Thirteen Western States.
- Interior Columbia Basin Ecosystem Management Project/Eastside Draft Environmental Impact Statement/May 1997(ICBEMP). We have reviewed the direction of the preferred alternative in ICBEMP and feel that the proposed action meets the intent/general direction of that alternative.

Impacts to the environment would be similar to or less than those disclosed in the above mentioned documents. Therefore, it is my decision that an Environmental Impact Statement is not necessary and will not be prepared.

Signed: _____

Teri Raml

Teri Raml, Field Manager
Klamath Falls Resource Area

Date: _____

7/30/02

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
LAKEVIEW DISTRICT
EA COVERSHEET

RESOURCE AREA: Klamath Falls

FY& EA #: OR-014-01-10

ACTION/TITLE: Short Lake Juniper Treatment and Prescribed Burn

LOCATION: Klamath Falls Resource Area

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FREEDOM OF INFORMATION ACT AND RESPONDENT'S PERSONAL PRIVACY INTERESTS: The Bureau of Land Management is soliciting comments on this Environmental Assessment. Comments, including names and street addresses of respondents, will be available for public review at the above address during regular business hours. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

Environmental Assessment No. OR-014-01-10

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Short Lake Juniper Treatment and Prescribed Burn

Klamath Falls Resource Area - Lakeview District
Klamath Falls, Oregon

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Introduction

Western juniper (*Juniperus occidentalis*) has been actively invading the shrub steppe community for the past 120 years. Active fire suppression, the introduction of extensive livestock grazing in the late 1800's and early 1900's, along with a wetter than normal period in the latter half of the 20th century, has allowed juniper to encroach into areas where it was formally excluded by periodic fire. Invasive western juniper communities are continuing to reduce and replace the shrub steppe communities and thus reduce habitat and suitable forage for wildlife and other rangeland species. This project is designed as both a habitat restoration and fuels reduction project that will help restore vegetative composition and structure to the shrub steppe community by the cutting and removing of western juniper.

Proposed Activity

The proposed activity would involve the removal of invasive juniper and/or reintroduction of fire to the project area. Adjacent private and state lands may be included if cooperative agreements are reached. Because of the limited public access to the project area, the rocky terrain and size of the young juniper, the western juniper will be cut by hand-felling methods. The juniper will be cut, hand piled, and/or burned at a later date. The cut juniper may be utilized if access through adjacent private lands and cooperative agreements are reached.

The reintroduction of fire, by way of prescribed burns, will be used to reduce excessive fuel loads, but also used to return fire back into an ecosystem that developed with fire as an integral part. The main purpose for the reintroduction of fire is to restore the vegetative composition and structure to the shrub steppe community. Ignition methods used during prescribed burning will be either manual or aerial. Manual ignition methods include drip torches, very pistols, fusees, matches, etc. and would be done on foot. Aerial ignition involves using a helicopter with a helitorch or a ping pong ball machine to ignite fuels. Seeding and planting of native vegetation may be used to assist in the re-establishment of the vegetative community.

Proposed Locations

T. 38S R. 11E Section 17, 20, 21, and 29 (See Map). Adjacent private and state lands may be included if cooperative agreements are reached.

Need for the Proposed Action

Western Juniper has been actively invading the shrub steppe communities in the Pacific Northwest for the past 120 years (Miller, Svejcar, and Rose 1999). More than 90% of the eight million acres of western juniper woodlands have developed over the past 100 years. The majority of these stands are still in transition from a shrub steppe to juniper woodland (Miller, Svejcar, and Rose 1999). Prior to Euro-American settlement, western juniper was confined to areas with shallow rocky soils underlain with fractured bedrock (Burkhardt and Tisdale 1969, Miller and Wingand 1994, Miller and Rose 1995). Western juniper has since expanded into meadows, riparian areas, productive rangelands, and big sage brush habitat. This expansion of juniper is attributed to current and past wildland fire suppression, introduction and overstocking of livestock in the late 1800's and early 1900's, and a mild and wetter than normal period around the turn of the 20th century. The most rapid period of expansion of juniper in mountain big sagebrush (*Artemisia tridentata ssp. vaseyana*) habitat occurred between 1885 and 1925 (Miller, Svejcar, and Rose 1999). It is estimated that western juniper woodlands currently are increasing faster than they are being converted from woodlands back to their ecological potential vegetation.

As shrub steppe communities are converted to juniper woodlands, community structure, composition, function, processes, and wildlife habitat suitability are altered. In one study, when juniper dominance

increased to about 50% of maximum closure, mountain big sage brush declined by nearly 80% of its maximum potential (Miller, Svejcar, and Rose 1999). Miller et al. also documented that herbaceous vegetation decreased in both species diversity and biomass and bare ground increased in mountain big sage brush communities as it was converted to woodlands. Bitterbrush (*Purshia tridentata*) is also negatively affected as shrub steppe communities progress towards juniper woodlands. Adams (1975) concluded that the existing plants of bitterbrush lived out their normal life spans but recruitment was drastically limited. Miller, Svejcar, and Rose (1999) also showed a reduction of leader growth on bitterbrush of up to 50% in late seral to closed canopy juniper woodlands versus open stands.

As areas that were once big sage brush or bitterbrush communities reach or surpass a condition “threshold” from juniper invasion, the vegetation community cannot return to its ecological site potential without intervention. Juniper has replaced or diminished the shrub and grass community due to competition for sunlight, water, and nutrients. Fire suppression and/or overgrazing has resulted in juniper encroachment to the point of reducing suitable forage for ungulates. The reduction in forage is of concern because the proposed area is critical winter range and transitional range (spring and fall) for mule deer (*Odocoileus hemionus hemionus*).

Juniper removal, along with reintroduction of fire to the vegetative community, is being planned to release and rejuvenate the shrub and grass communities. Juniper removal projects on Harpold Ridge (T39S, R11E, Sec. 32) and North Harpold (T39S, R11E, Sec. 29) in the early 1960's have been considered successful in re-establishing shrub communities. Recent (1997-1999) removal projects of encroaching juniper in Lorella (127 acres), Swan Lake Rim (360 acres), and Horse Camp Rim (45 acres) have also been considered successful in the changing of communities from overstocked juniper woodlands back to shrub and grassland communities. The Klamath Falls Resource Area Record of Decision and Resource Management Plan (June 1995) addresses juniper encroachment treatment of big game foraging habitat on page 34.

In areas where juniper has not encroached but the shrub steppe communities have been virtually untouched by fire, mountain big sage and mountain mahogany stands are often decadent and overgrown, with little recruitment of new seedlings and grasses. These areas provide little foraging opportunities for wildlife and other rangeland species. The absence of fire in these areas has also produced fuel loads that increase the potential for a wildland fire to occur. Not only are wildfires potentially more intense than before due to fuel loading, but also with the ever-growing wildland urban interface, the risk of a wildland fire affecting human inhabitants is increasingly more likely. Recent fires across the nation have brought this reality to the forefront.

Objectives

There are two main management objectives for this proposed project:

- **Fuels Reduction and Reintroduction of Fire into the Ecosystem** - The reintroduction of fire, by way of prescribed burns, is necessary to not only reduce excessive fuel loads, but also to bring fire back into an ecosystem that developed with fire as an integral part. The main purpose for the reintroduction of fire is to restore the vegetative composition and structure to the shrub steppe community and is to mimic the natural occurrence of fire by creating a mosaic of burned and unburned areas. Treatments may consist of repeated entries (successive prescribed burns) to reduce the fuel loads to an adequate level. As the urban interface continues to expand, the risk to loss of private property from wildland fires continues to increase. The proposed project is designed to reduce these risks to the adjacent landowners and their properties by reducing fuel loads.
- **Wildlife Habitat Restoration** - The proposed area is composed of three grazing allotments and is also

designated as critical winter and transition range for mule deer. The removal of invasive juniper will assist in the reestablishment of the site potential shrub steppe community and create a more natural fire regime. This part of the project may include the planting of native species to assist in the reestablishment of both grasses and shrubs.

Conformance with Land Use Plans

Final - Klamath Falls Resource Area Management Plan and EIS (FEIS) (Sept. 1994)

Klamath Falls Resource Area Management Plan/Record of Decision (RMP) (June 1995)

Klamath Falls Resource Area Fire Management EA#OR-014-94-9 (June 10, 1994)

Alternatives

Alternative A (Proposed Action):

The proposed project area comprises 495 acres of which 215 acres of public land may be treated using prescribed fire and may involve a combination of treatments. Adjacent private and state lands may be included if cooperative agreements are reached.

This alternative proposes treatment of juniper by hand-felling methods (units 1, 2, and 3 on the project map). The cut juniper would be piled or slashed and burned at a later date. Burning of the cut/piled juniper would be done at appropriate times considering the weather, fuel loading, and other site-specific factors. All “old-growth” juniper will be protected and retained (see Project Design Features (PDF) section for more details).

Currently public access to the area is limited, but if proper access is gained through cooperative agreements with private landowners, the juniper may be available to be utilized by the public. The juniper would be cut, moved on designated trails to designated landings and then removed from the site. Uses of juniper may include, but are not limited to, firewood and posts (see PDFs).

Prescribed fire will also be used to reduce the fuel loads, as well as eradicate the encroaching juniper within the proposed area (unit 4 on the project map). These fires would be Management Ignition (MI) prescribed fires. These are intentionally ignited fires set to accomplish management objectives in a specific area under prescribed conditions identified in approved fire plans (time, season, smoke management, weather conditions, location, and firing techniques selected by the BLM). All prescribed burns are planned and authorized events. Pretreatment by hand may need to be done to the decadent shrubs and juniper before prescribed burning to reduce fuel loads or to facilitate burning to meet objectives.

The objective in selecting areas and implementing the prescribed fires would be to mimic the natural occurrence of fire, creating a mosaic of burned and unburned areas. The objective of the prescribed burn is to create a mosaic of approximately 50% burned areas (with various stages of burned materials) and 50% of the burn unit left unburned. Prescribed burning would be done when all the appropriate environmental conditions (i.e. temperature, relative humidity, fuel moisture, wind direction and speed, etc.) are available to meet the desired objective.

The prescribed burn would be conducted using manual or aerial ignition. Fuel breaks would be constructed by hand. The number of hand lines and their width would vary depending on fuel loading in the area. Fuels specialists would designate the number and widths of strips necessary to adequately reduce the hazards from a wildland fire. The unit will be black-lined from the fuel breaks manually with drip torches on the top of the ridge and the north and south boundaries. Manually ignited strips will be allowed to back down the slope from the top of the ridge. Due to the steepness of the slope and the need for protecting the safety of the ground crews, hand ignition will not take place on the interior of the unit.

The ignition techniques and procedures within the unit will vary due to variable weather and fire behavior. Hand-fired flares or aerial ignition will be used to create the desired mosaic. Aerial ignition involves using a helicopter with a helitorch or a ping pong ball machine to ignite fuels. The exact method of ignition will be determined by the Burn Boss based on the desired outcome and the existing vegetative, topographical, or weather conditions.

After treatments, some areas may be planted with native shrubs and broadcast seeded with native species to help reestablish the native plant communities. Areas that may be planted include areas that are currently void of vegetation, areas susceptible to erosion, areas susceptible to invasion by cheat grass or noxious weeds, and those areas that previously had native shrubs which have been excluded by juniper encroachment. Most areas would not be planted, but left to allow natural succession and the reestablishment of vegetation to occur.

Alternative B: (Hand-Falling and Pile Burning Only)

Under this alternative, the method of juniper removal would be limited to hand-falling only in units 1, 2 and 3. The juniper would be cut and piled and/or left to be burned at a later date to remove excess fuel from the project area. Decadent shrubs would be treated by hand only and piled and/or left to be burned at a later date. Treated areas may be replanted with native plants and seeded with native grasses to assist with revegetation.

Alternative C: (Fire Only)

This alternative would reintroduce fire only to selected areas (unit 4) within the project boundaries. The objective in selecting areas and implementing the prescribed fires would be to mimic the natural occurrence of fire, creating a mosaic of burned and unburned areas. Treated areas may be replanted with native plants and seeded with native grasses to assist with revegetation. No hand-falling of juniper would occur and no utilization (removal for personal use) of juniper would occur.

Alternative D: (No Action)

Under the No Action alternative, no new treatments would be implemented. Current management of the proposed project area would remain the same.

Affected Environment

Vegetation and Soils

Most of the soils in the Langell and Yonna valley juniper woodlands are classified in the Lorella series or as a complex of the Lorella series. This series is described as be very stony, well drained, with an average slope of about 20%. The soil is derived from tuff and basalt. On unvegetated soils, runoff is rapid and the hazard for erosion is high.

These sites have a climax community of vegetation represented by Western Juniper (*Juniperus occidentalis*) with old growth juniper in the rocky areas, Antelope Bitterbrush (*Purshia tridentata*), Mountain Big Sagebrush (*Artemisia tridentata ssp. vaseyana*), and various grasses, including Idaho Fescue (*Festuca idahoensis*), Bluebunch Wheatgrass (*Pseudoroegneria spicata*), and Thurber's Needlegrass (*Achnatherum thurberiana*) and various forbs in the understory. These soils can support a highly diverse understory. According to the Klamath Falls Resource Area Ecological Site Inventory data, these vegetation communities fall within the following ecological site descriptions: "Shrubby Loam 16-20", "North Slope 14-18", "Shallow Loam 14-18" and possibly "Juniper Claypan 16-20".

The soils on the east-facing ridge of Short Lake Mountain are classified as Rock Outcrop-Dehlinger complex. These soils have an average slope of 50 percent and are derived from basalt, tuff (volcanic ash),

and andesite (fine grained igneous rock). Permeability is moderate, and the hazard of erosion is moderate. The slope is a mixed shrub community. Mountain Mahogany (*Cercocarpus ledifolius*) is located at the top of the ridge, with Chokecherry (*Prunus virginiana*), Snowberry (*Symphoricarpos* spp.), Gooseberries and Currants (*Ribes* spp.), and other shrubs within the talus/rock outcrop area. These vegetation communities probably fall within the “Mahogany Rockland 10-20” ecological site description.

Range

There are three grazing allotments within the proposed project area. All are extensively intermingled with, and run in common with, various parcels of adjacent private lands owned by the various grazing lessees. The basic information about each allotment is as follows:

0826 Haskins - There are 560 acres of public land in this allotment. Season of use is from 05/01-06/15 with a total of 80 AUMs (animal unit month). See the KFRA ROD/RMP page H-27 for complete details of the Haskins allotment.

0830 Hungry Hollow – There are 280 acres of public land in this allotment. Season of use is 05/01-06/15 with a total of 40 AUMs. See page H-30 for details.

0842 Masten – There are 485 acres of public land in this allotment. Season of use is 05/01-06/15 with a total of 40 AUMs. See page H-36 for details.

Special Status Plants

Botanical surveys were conducted during 2001 in the portion of the proposed project in section 17. The remainder of the area was surveyed for botanical resources in 1994. One population, composed of three sub-populations, of fringed campion (*Silene nuda* ssp. *insectivora*), a Bureau tracking species, was found in 1994. This population is located in the NE quarter of section 29, just northwest of Short Lake.

Noxious Weeds

Botanical surveys were conducted during 2001 in the portion of the proposed project in section 17. The remainder of the area was surveyed for botanical resources in 1994. Musk thistle (*Carduus nutans*) was found in the 80 acre parcel of BLM land in section 17 (SE/SE), scattered along the top of a dike. Also, a cleared area on private land just north of the BLM parcel in section 32 was found to be dominated by musk thistle, Canada thistle (*Cirsium arvense*), and other introduced, weedy species.

Water Resources/Hydrology

There are no ephemeral or intermittent drainages within the project boundaries.

Wildlife

No species classified as Threatened or Endangered under the Endangered Species Act are known to exist within the proposed project area or on adjacent lands.

The proposed project area is within critical wintering range for mule deer, which translates to their reliance on this area for habitat between November 15 and April 1. The proposed project area lies within the Klamath Management Unit that encompasses 792,320 acres. The mule deer populations in the Klamath Management Unit are estimated at 3,500 animals, which is about 55% of the management objective set by Oregon Department of Fish and Wildlife (ODFW). The proposed treatment area is annually monitored by ODFW and the data from their aerial counts is used in trend modeling. Surveys for songbirds were conducted on the ridge along the edge of the project area in 2001. The census stations included some habitat components representative of the project area, however, more juniper is

present. Species detected within 75 meters of each census station included the scrub jay, spotted towhee, ash-throated flycatcher, western kingbird, American robin, American goldfinch, black-billed magpie, bushtit, Bewick's wren, Brewer's blackbird, and brown-headed cowbird. A few other landbirds closely associated with shrub habitat that are expected to occur in the project area include the green-tailed towhee, lark sparrow, and loggerhead shrike. These are species of concern due to habitat loss in the Western United States (Paige and Ritter 1999).

To date, no surveys for bats have been conducted in the proposed project area. Based on habitat association and range, bats which may utilize the area include the California myotis (*Myotis californicus*), long-eared myotis (*Myotis evotis*), Yuma myotis (*Myotis yumanensis*), big brown bat (*Eptesicus fuscus*), and pallid bat (*Antrozous pallidus*). Although the hoary bat (*Lasiurus cinereus*) is associated with forests, it may be found in shrub-steppe habitat during spring and fall migration (Verts and Carraway 1998). The long-eared myotis, Yuma myotis, and pallid bat are designated as Bureau "Tracking" by the Bureau of Land Management. The designation of Bureau Tracking is assigned as an early warning for species that may become of concern in the future, where more information is needed to determine their status, but where active management is not required at this time. Other bat species listed as Bureau Tracking are not likely to occur in the project area.

To date, no surveys for herptiles have been conducted in the Short Lake area. The Bureau of Land Management expects the herptile species normally associated with dry, rocky, shrub and juniper woodland habitats to occur in the project area. One of the species that is likely to occur in the area is the northern sagebrush lizard (*Sceloporus graciosus*). The northern sagebrush lizard is the only Bureau "Tracking" herptile species for the Bureau of Land Management in Oregon expected to be at this site. The northern sagebrush lizard is a shrub obligate species which means that they are dependent on shrub habitat for most parts of their life cycle (Brown et al., 1995). The northern sagebrush lizard is also an Oregon Department of Fish and Wildlife "Sensitive-Vulnerable" species. This designation is for species for which listing as threatened or endangered is not believed to be imminent and can be avoided through continued or expanded use of protective measures and monitoring.

Cultural Resources

The project area falls within the northern periphery of the ethnographic territory of the Modoc Indians (Ray 1963). Today the physical remains of their culture are scattered throughout the landscape in various forms including lithic scatters (where stone tools were manufactured), permanent villages, short term special use sites and stacked rock features.

The subsistence patterns of the Modoc revolved around the hunting of upland game, gathering roots such as epos or Ipos (*Perideridia* sp.) and camas (*Camassia quamash*), and fishing in the Lost River and its tributaries. Their permanent village sites tended to be in the lowlands around Lost River. Sites in the uplands tended to be temporary task-related sites associated with hunting and gathering activities.

As part of their spiritual life, the Modoc often made artificial rock piles. For the Modoc, stacking rocks was part of a ritual practice referred to as a "vision quest". This ritual was considered a rite of passage where an individual at the age of puberty stepped into adulthood (Goodwin 1997).

Historically, fur trappers from the Hudson's Bay Company were the first Euroamericans to arrive in the Klamath Basin in the mid 1820s. In 1864, The Modoc, along with the Klamath, and Yahooskin Band of Snake Indians, ceded their territories to the United States. Euroamericans began homesteading the region in the 1860s - 70s. The town of Bonanza, located near the project area, opened a post office in 1875. Later, in 1878, a sawmill was built in Bonanza (Gray 1995).

Early settlement focused on cattle ranching, farming, and logging (Follansbee and Pollock 1978). Of these three activities, evidence of ranching and logging may be found in the project area today in the form of fences and can dumps.

Fire and Fuels

Frequent, low intensity ground fires occurred prior to non-native settlement and fire suppression. An unnatural fuel bed has accumulated as a result of fire suppression. Juniper encroachment has become a serious problem that is directly correlated with fire suppression activities. The proposed treatment area also has a large amount of decadent shrubs and is relatively uniform in age. The introduction of fire as a managed, planned event will revive the natural fire cycles and reduce fuel loads, as well as allowing for rejuvenation of various shrub species. The reduction of fuels is necessary to protect ecosystems and adjacent private lands from catastrophic wildfire.

Visual Resources

The proposed project landscape is characterized currently as a juniper woodland with no unique landscape features. It is categorized as a Visual Resource Management class IV which means that management activities may occur to change landscape characteristics. However, every attempt should be made to minimize visual impacts through careful location, minimal disturbance, and repeating the basic elements of form, line and color.

Environmental Consequences

Vegetation and Soils

Treatments proposed in Alternatives A, B and C, would alter the current vegetative communities, but to varying degrees dependent on the type of juniper removal, decadent brush removal and the use of prescribed fire. Hand felling would remove the juniper and allow shrubs, forbs, and grasses to compete. Prescribed burning would in the short term remove some of the browse and grazing habitat, but the rejuvenation of the shrubs and forbs would be beneficial in the long term. Cheat grass, a frequently present weed species, could invade areas where prescribed burning is utilized. The broadcast seeding or planting of native grasses and shrub species would accelerate the revegetation process of more desirable species, helping to restore the shrub and grassland communities.

Alternatives A, B and C would affect the current vegetative communities by helping to restore the shrub and grassland communities to their past form and function. Alternatives A and C (using prescribed fire) would benefit shrub species in the long-term. There would be short term negative impacts with the use of fire killing above ground stems and foliage, but species such as Chokecherry (*Prunus virginiana*), snowberry (*Symphoricarpos* spp.), gooseberries and currant (*Ribes* spp.) and mountain mahogany (*Cercocarpus* spp.) respond well to fire and actively resprout after a burn. Bitterbrush (*Purshia tridentata*) would be negatively impacted by prescribed burning because it does not resprout, but this will be mitigated by replanting bitterbrush after the burn.

Plant communities dominated by healthy shrub and native perennial grass communities would likely be minimally affected by burning as long as the current percentage composition of exotic annual grasses is <10%. These areas may have a low to moderate increase in native annuals, but normal plant succession would eventually lead to a diminishment of these annuals and an increase in perennial natives.

The increased forage that would result from any of the three action Alternatives A, B and C would be beneficial for the grazing allotment, as well as big game species. It would be necessary to coordinate

grazing management to lessen the impacts on recently disturbed areas. The impacts to the cut areas would be evaluated individually and grazing management recommendations would be decided at that time. Alternative D (No Action) would not benefit grazing or browse habitat and over time would further reduce suitable forage and would increase the potential for catastrophic wildfire in the area.

Both prescribed fire and wildfire may directly affect soil by consuming organic matter, altering nutrients, creating water-repellent conditions, decreasing infiltration rates, and removing soil surface cover (Hungerford et al. 1990. Debano 1990. And Childs et al. 1989). The effects of wildfire are often more severe and long lasting than effects associated with prescribed burning. Although prescribed fire effects are generally short-term, where soils are shallow and have low natural fertility or are susceptible to erosion, prescribed fire can have a negative effect on productivity.

Hand cutting and pile burning of juniper (Alternatives A and B) would have a minimal impact on soils which would be offset by the positive increase in vegetation cover, which would thereby decrease the potential for soil erosion. By removing the overstory canopy (juniper), there would be a decrease in evapotranspiration and an increase in water availability which benefits understory plant species and therefore, increases suitable forage. If utilization of juniper does occur, there could be negative impacts such as localized soil compaction and displacement, depending on the type of utilization and the method by which the cut juniper is transported (see PDFs).

The Rock Outcrop-Dehlinger complex soils are shallow with a moderate hazard of erosion. Sheet and rill erosion are lessened due to the high percent of coarse fragments contained within these soils. Because of steep slopes which average 50 percent, there is concern of erosion with the removal of significant ground cover. Although the current shrub cover will probably resprout following fire, timely revegetation measures would be suggested if significant ground cover is lost during treatment.

Range

Alternatives A, B and C would be beneficial to grazing allotments because they would increase forage. The BLM will request that the rangeland permittees rest their allotments for one year, preferably two years, to help mitigate post-treatment impacts (see PDFs). However, full rest of allotments may not be possible in some areas due to the lack of existing fences to restrict livestock movement. If grazing takes place during the two growing years after treatment, it should be at no more than light overall use levels (i.e. <35% utilization) in the treated areas.

There would be a short-term loss of grazing receipts to the government if the allotments were rested (not grazed) for 1-2 growing seasons after treatment. There would also be the potential short-term loss of forage for deer and other wildlife on grazing allotments. However, the expected post-treatment increases in higher quality and quantity of forage should more than offset the short-term loss and inconvenience to the grazing leaseholders.

Special Status Plants

Prescribed fire, applied under Alternatives A and C, could impact special status plant species if the fire is applied outside the season to which these plants are adapted to the occurrence of fire. However, the reduction of hazardous fuel levels and the reintroduction of fire as an ecosystem process could positively affect special status plant species that are adapted to a natural fire frequency and intensity. The fringed campion sites located during botanical surveys will be identified and appropriate protection measures will be implemented, therefore, negative impacts to this population are not expected. Protection measures will include flagging of buffers around sites, and/or unit boundary adjustments. Negative effects, the potential loss of individual plants and/or populations, may occur to even fire-adapted species in areas that have excessive fuel loading. These fires may burn hotter and longer than in past fire events under which these

species evolved.

Alternative B would have less potential to directly affect populations of special status plant species. Also, the removal of accumulations of heavy fuel loads would reduce the potential for a wildfire that may burn hotter and longer than in past fire events under which these species evolved. However, the areas on which these fuels are piled would be subject to the effects of an intense, long duration fire which would disturb those soils to the extent that noxious weeds may have a competitive advantage over native species, including special status plant species.

Alternative D would have little potential to directly affect populations of these species. However, if fire continues to be excluded as an ecosystem process, habitat changes may impact special status plant species in the long-term. In particular, the maintenance and accumulations of heavy fuel loads could result in a wildfire which would be a high intensity fire, to which many of the native species are not adapted. Special status plant populations may be affected by the physical disturbance associated with fire suppression activities, and through alteration of the nutrient cycling regime of a site from the application of chemical flame retardants.

Noxious Weed Risk Assessment

The use of prescribed fire in Alternatives A and C may increase noxious weed populations where they already exist. There would also be the potential for introduction of noxious weeds into the area from sources outside the project area on the vehicles and machinery used to implement prescribed fire projects. However, noxious weed prevention stipulations would reduce this potential to introduce noxious weeds.

Alternative B would involve less physical disturbance to the project area and thereby create less of the disturbed conditions under which many noxious weeds have a competitive advantage. Also, the potential for the introduction of noxious weeds into the area from sources outside the project area would be limited to vehicles entering the project area to transport workers and tools.

Alternative D (no action) would not create the physically disturbed conditions under which many noxious weeds have a competitive advantage. However, due to the potential for wildfire from the persistence of high fuel loads, weed populations may have a competitive advantage under conditions resulting from the soil disturbance associated with fire suppression activities, and from alteration of the nutrient cycling regime of a site as a result of the application of chemical flame retardants. The vehicles and machinery entering the project area to suppress any wildfires would increase the potential for the introduction of noxious weeds from sources outside the project area.

Water Resources/Hydrology

All alternatives would have a low impact on nearby watercourses since no streams exist within the project area.

Wildlife

Under the proposed Alternatives A, B and C, the removal of juniper in shrub steppe habitat would assist in the recovery of the shrub community, which translates into increased forage for mule deer. Mule deer inhabit the proposed project area during the winter months. The potential for disturbance from activities associated with the proposed action would be minimized by the seasonal restrictions (see PDF's). The loss of juniper trees may reduce hiding and thermal cover temporarily until the shrub community has a chance to recover, but the old growth trees and designated wildlife leave trees, along with the untreated areas, would provide both adequate thermal and hiding cover.

In the long-term, the proposed actions (Alternatives A, B and C) would result in a healthier, more sustainable shrub community consisting of a variety of seral stages which would be more representative of historical conditions. In addition, small juniper which are encroaching into the area would be eliminated. If left untreated (Alternative D), the juniper would eventually out-compete the shrubs and herbaceous vegetation. The shrub community resulting from the proposed action alternatives should improve the conditions for shrub dependent species over the long term. In the short term, the proposed actions could result in the loss of reproduction for the birds using the area during the year of actual treatment.

The proposed actions (Alternatives A, B, and C) could negatively affect bats which may be using the area for roosting during the year of treatment. It is unknown if the project area provides an important food source for bats; however, if bats utilize the area, losses to their prey base would occur only over the short-term. Considering the small amount of acreage affected by this project, the bats are likely to find suitable habitat for prey in the vicinity. Over the long-term, no major negative effects to the populations of bats are expected from these actions.

Alternative D (No Action) would be detrimental to mule deer and all shrub steppe obligate species. If left untreated, western juniper would progress to a woodland, reducing both shrubs and herbaceous vegetation. This would translate into the reduction of forage availability for mule deer and loss of habitat for other shrub steppe obligate species. Species associated with juniper woodlands would likely benefit from Alternative D.

Alternative A and C could negatively impact all herptiles in the project area, including the northern sagebrush lizard. The sagebrush lizard would be affected in the short-term because they are a shrub dependent species. However, the management objective of the prescribed burn is to create a mosaic of approximately 50% burn and unburned areas throughout the site, therefore, the impact to lizards and other herptiles would be minimal. The goal of prescribed burning and juniper removal is to restore and rejuvenate shrub-steppe communities and this would benefit the northern sagebrush lizard and all other herptile species associated with this habitat type in the long-term.

Cultural Resources

All cultural resources older than 50 years must be evaluated for eligibility to the National Register as part of the Section 106 process established by the National Historic Preservation Act of 1966, as amended in 1992 (NHPA) and reinforced by 36 CFR Part 800. Most of the proposed project area was surveyed and inventoried under contract with Cascade Research in 1995 as part of the Wood River Equalization Land Disposal Project OR49068. Survey design for that project followed a BLM Class III standard and cultural resources were identified.

Areas not surveyed in 1995 (approximately 120 acres) will be surveyed prior to any ground disturbing activity. However, although the area will be completely surveyed before ground disturbing activity, the potential exists for project activities to impact subsurface cultural materials. The previous BLM Class III surveys did not incorporate sub-surface methods, thus sites may have been missed due to heavy organic ground cover.

Before ground disturbing activities commence, all sites in the project area will be relocated and demarcated in the field with flagging. The protection measure employed will be to avoid the sites during project activities. It is anticipated that the proposed actions in Alternatives A through D would have no effect upon known cultural resources. If cultural resources are encountered during proposed project activities, all work shall stop in the immediate area and the lead area archaeologist will be notified. Upon notification, the archaeologist will conduct an investigation to mitigate the situation.

Should adjacent private lands later be included within the proposed projects, cultural resource inventory would also need to be performed on private lands prior to treatments.

Although the Klamath Tribes currently have no federally recognized “treaty rights” on BLM lands within the project area, they remain concerned about land use decisions made by BLM which may have potential impacts to cultural resources. Consultation and coordination between the Klamath Tribes and the BLM have been initiated. Periodic information sharing meetings are planned to keep the Klamath Tribes informed of BLM activity.

Fire, Fuels and Air Quality

Prescribed burning effects and fire effects on air quality are analyzed in the Klamath Falls Resource Area’s Programmatic EA on Prescribed Burning #OR014-94-9.

Visual Resources

Since the proposed project areas are classified as Visual Resource Management class IV, the action Alternatives A, B and C have minimal impact on visual resources. Impacts on visual resources will be lessened by feathering edges or boundaries and creating uneven borders as well as leaving selected juniper such as old-growth and selected wildlife trees (see PDFs).

Environmental Justice

No disproportionately high or adverse human health or environmental effects are expected to result from implementation of the juniper treatment, brush treatments and prescribed burns. For all alternatives, no direct or indirect disproportionately high or adverse human health or environmental effects to minority or low income populations are expected to result from implementation of the proposed action or the alternatives.

Other Consequences

The following resources are not present or would not be impacted by any of the alternatives: prime and unique farmlands, mining claims, flood plains, archaeological or paleontological resources, wilderness, roadless areas, research natural areas, special areas (Areas of Critical Environmental Concern), unique geographical features, wild and scenic rivers, wild horses/burros, or hazardous materials. The proposed project does not adversely affect energy development nor contribute to the introduction or spread of non-native weed species.

Cumulative Effects

Activities that could add cumulatively to the effects of the proposed actions include other juniper removal and fuel reduction projects. These types of projects are proposed and/or are occurring on both public and private lands. The removal of juniper in other areas would cumulatively improve vegetation diversity, improve and restore shrub steppe communities and improve wildlife habitat. Prescribed burning projects cumulatively have positive impacts by reducing heavy fuel loads, reducing risk of catastrophic wildfire, restoring natural fire regimes and restoring shrub and grassland communities. There could be negative impacts of prescribed burning on air quality if multiple prescribed fires are burning in multiple areas at one time, but smoke management guidelines, including the time of year prescribed burning takes place, would minimize or reduce these risks.

Consultations

No Threatened and Endangered species are present within the proposed project area. Therefore, the BLM has determined that the proposed actions would be considered a “No Effect” on all Threatened and Endangered species and consequently there is no need to consult with U.S. Fish and Wildlife Service on the proposed actions.

Project Design Features (PDF's) and Mitigating Measures

Project Design Features/Mitigating Measures Applicable to All Action Alternatives (A-C)

Resources

- All juniper considered “old growth” would be retained. Old growth is generally defined as any tree over the age of 150 years old and these trees are typically distinct in appearance (Miller et al 1999). Their canopy becomes increasingly non-symmetrical in appearance with rounded-top canopies, canopies that contain dead limbs or spike tops, largely irregular tapering trunks, and deeply furrowed and fibrous bark. Younger trees (< 150 years) are more conical shaped and the bark is more typically scaly rather than furrowed (Miller et al 1999).
- The rangeland permittees will be requested to rest the allotment for at least one year and preferably two years after treatment in areas where greater than 35% of the allotment was treated. The KFRA range specialist will coordinate this action with the rangeland permittees.
- The contractor will be required to rinse machinery prior to moving onto the project area and prior to leaving an area with noxious weeds present, to prevent the potential spread of noxious weeds and other non-native species. Removal of all dirt, grease, and plant parts that may carry noxious weed seeds or vegetative parts is required and may be accomplished with a pressure hose. Noxious weeds in the immediate area of operations shall be mowed to ground level prior to the start of activities.
- Some selected younger (< 150 years) juniper trees may be retained as wildlife habitat. These trees will be identified by KFRA wildlife biologists prior to the start of activities.
- The proposed project area is classified as critical winter range for mule deer. No activities (including juniper cutting, piling, or burning; and vegetative planting or seeding specific to the alternative) will occur between November 15 and April 15 (unless approved by a KFRA wildlife biologist).
- Cut juniper may be utilized (fence posts, firewood, lumber, biomass, etc.), if economically and logistically feasible. The cumulative effects of detrimental soil conditions are not to exceed 20% of the total acreage within the activity area (the total area of ground including roads, skid trails and landings). To minimize soil disturbance, skid trails and landing areas will be designated. Protective measures such as water bars, grass seeding, planting deep rooted vegetation, and/or mulching could be applied to lessen soil erosion and sedimentation.
- The proposed project area will be reviewed and necessary surveys conducted for cultural, botanical, and biological clearances, prior to any ground disturbing activity being implemented.
- Special status plants requiring protection will be buffered according to guidance provided by the resource area's botanist, and the area within these buffers will not be treated.
- Cultural sites requiring protection will be buffered according to guidance provided by the Resource Area's archaeologist, and the area within these buffers will not be treated.
- If any cultural sites are located during project implementation, activities will be temporarily suspended until appropriate mitigating measures are developed and the resource area archaeologist has provided clearance to proceed.
- Where possible, treatment units within the proposed area will be designed to reduce the visual effects by feathering edges, creating uneven borders, and leaving selected juniper.

Prescribed Fire

- Pile burning, prescribed fire, and smoke management will be subject to KFRA Programmatic

- EA#O14-94-9 addressing the use of prescribed fire.
- Adjacent landowners and residents will be notified prior to burning.

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Short Lake Proposed Treatment Area

